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COMPLICATED BY PREGNANCY?

BY

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HOW SHOULD WE PROCEED WHEN ABDOMINAL TUMORS ARE COMPLICATED BY PREGNANCY?

By JAMES F. W. ROSS, M.D.,
TORONTO.

I HAVE selected this subject on account of the absence of anything like united opinions as to the best methods of procedure in these trying cases. To illustrate a few points and to put a few cases on record, I intend inflicting on you the usual tedium of the relation of such cases, but hope that you may find some food for thought that may repay any of you who are thinkers—which, I trust, includes all of the Fellows of this Association.

Wishing to add my views on the medico-legal aspect of the question, a slight preamble will be necessary, and I hope it will not do any of you any harm to tell you some things you already know.

Among the most difficult problems that the physician or surgeon, gynecologist or obstetrician, has to solve is the presence or absence of pregnancy. In the *Canadian Practitioner* of this year I have published a case of "unadmitted pregnancy." There was no positive sign by which pregnancy could be determined or edematous uterine myoma excluded. The patient came to have a tumor removed. They often come for this purpose, but give some clue to the existence of pregnancy. This case gave no such sign and many denials as to the possibility of such a condition. She was even prepared for operation, by mistake for a case of ovarian tumor occupying the next bed.

Having seen an abdomen opened by an eminent surgeon for the removal of an edematous myoma that proved to be a pregnant uterus, I determined upon exploration from below in this

case. The cervix was dilated, the finger readily felt the fetal parts; the woman was put back to bed, and went out of the hospital two weeks, after still carrying her tumor and still denying her guilt. But this is the old, old story.

Only three days ago I had the dilator in my hand ready to explore the bleeding uterus of a widow of three years' standing, of whose case a most exhaustive history had been taken, and from whom no evidence of pregnancy could be elicited. Feeling suspicious from the dilated veins on the anterior lip of the cervix and the softened condition of the parts, the dilatation was postponed. Next day, after many denials, a confession was made and the diagnosis became plain. We all see such cases.

These facts are important from a medico-legal standpoint, and I often wonder that the plea of ignorance of the condition present is not oftener advanced by the abortionist. The production of abortion by the passage of a sound in a case of concealed pregnancy is surely not a crime. I have done it myself in one case. We now reach the point I wish to make. There is nothing of malpractice in the opening of an abdomen for the removal of a tumor during the existence of a concealed pregnancy. For our own protection in the future, nothing can be more to the point than Dr. Vander Veer's remark, "that it is the duty of the profession at large to maintain that pregnancy may be absolutely concealed by other intra-abdominal conditions." But we should endeavor to improve our means of diagnosis.

It is my intention to discuss cases in which pregnancy has been recognized.

Our esteemed fellow, Professor Vander Veer, in the *American Journal of Obstetrics*, November, 1889, discussed the subject of "Concealed Pregnancy and its Relations to Abdominal Surgery," in his usual thorough-going manner. He searched much literature and made many personal inquiries to gain the material sought. I cannot present such a well-filled wallet. I have consulted some authors, but consultations with the past are not always productive of progress. Medical and surgical nonsense is handed down from generation to generation through the medium of text-books. Personal experience of abdominal

tumors complicating pregnancy, owing to their rarity, must necessarily be but meagre. When we add the outcome of many meagre experiences—experiences of men with modern advanced ideas and working along the same lines—we have a large total. I hope that in the discussion the members will give their personal experiences and will endeavor to elaborate them for our volume of *Transactions*, and thus my object will have been accomplished.

What Tumors Complicate Pregnancy?

I intend to discuss but two forms:

Ovarian tumors.

Myomatous tumors.

For all practical purposes these should be sufficient. Some of the rules applying to these may be made to apply to other forms of tumor. Much information may be gained from statistics; and statistics may lead us far astray.

Case I. *Ovarian tumor and four months' pregnancy; multilocular cyst; rupture of a locule previous to operation; abortion; death.*—My friend Dr. McFarlane has kindly given me the following notes of this case: Mrs. F., the mother of two children, was noticed by her friends to be enlarged as if four or five months pregnant. She did not think that she was pregnant. Menstruation was regular for a time, but then ceased for four months. She engaged her monthly nurse, thinking that she must be near full time. It was understood that Dr. McFarlane was to attend her in her confinement as usual. Four months after the cessation of the menses she was taken suddenly ill. On arrival, the doctor found her suffering from shock. She experienced sudden pain in the abdomen and felt faint. When seen she was almost pulseless, with a pinched expression of the face and cold extremities. She rallied but could not get up. I saw her in consultation with Drs. Temple and McFarlane. Owing to the tenderness we administered an anesthetic and made out a pregnancy and an ovarian tumor. The patient was evidently suffering already from septic poisoning arising either from rupture of the cyst or twist of its pedicle, and we agreed that immediate operation was indicated. The patient was removed after several days' delay to the General Hospital. Septicemia was becoming more profound during the interval.

On opening the abdomen the uterus came forward into the wound and obstructed the operator. One locule was up under the liver. Another was wedged down in the pelvis, and another above and behind it near the spleen. Difficulty was experienced in puncturing the different loculi. If the uterus had been emptied of its contents the removal of the tumor could have been

more readily accomplished. The patient did not do well; she was septic before the operation and died three days after it. Miscarriage took place before death.

CASE II. *Myoma of broad ligament (thirty-five pounds), and pregnancy (four and a half months); Porro's operation; recovery.* (Reported to the Huron Medical Association, and published in the *American Journal of Obstetrics*, Sept. 1891.)—Mrs. H., aged thirty-nine years; III-para; last child ten years ago. Menstruation regular until February, 1891, when it ceased. She saw a slight flow in the middle of May. She thought that she was pregnant when the menstruation ceased.

Two years ago she complained of pain in the back. One year ago (Feb. 1890) she noticed a lump in the left iliac region about the size of a hen's egg. This increased in size until it reached its present dimensions (thirty-five pounds). Menstruation for some months before it ceased had been increased in quantity, clotted, and more painful, but regular.

On examination I found the condition already described in the *American Journal of Obstetrics*. Diagnosis: Edematous myoma and pregnancy sixteen to eighteen weeks. Advised immediate operation owing to her greatly distended condition and the rapidity of the growth. The tumor had grown to weigh about thirty-five pounds in sixteen months.

I need only say that I removed tumor, uterus, ovaries, and tubes, and made an extra-peritoneal pedicle of the cervix. After a desperate struggle for life the woman made an excellent recovery and is now at work on her farm.

When performing the operation I at first threw the rope-clamp around the tumor, but in a moment decided to take out the uterus, tubes and ovaries as well. I am firmly convinced that this was the best course to pursue.

Three methods of procedure were presented:

1st. To make a pedicle of the tumor where it arose from the left broad ligament and leave the pregnancy alone. The pedicle would have been an extra-peritoneal one and four and a half to five inches in diameter.

2d. To make the pedicle as stated, and empty and restitch the uterus.

3d. To remove everything as I did.

Without asking for counsel, I determined upon carrying out the latter. Asking for advice at such a time is a reprehensible practice. A surgeon undertaking such an operation should have all the peculiarities of the case turned over in his mind, and he ought to know best how to proceed. When I err on another's judgment I feel loath to acknowledge it as an error

of my own, and feel dissatisfied; but when I err on my own judgment I feel like a fool, but am at any rate better satisfied. Others here have no doubt enjoyed this satisfaction.

To have made a pedicle of the tumor's pedicle would have been a madman's act. The uterus would soon have expelled its contents and the woman would have promptly died.

To have complicated myomotomy and an extra-peritoneal pedicle with Cesarean section would have been equally hazardous. The third course was the proper one to pursue.

CASE III. *Uterine myoma and pregnancy at full time; attempted forceps delivery; delivery by version; death fifteen days after, from retained lochia.* (Notes of this case were kindly furnished by Dr. Hillary.)—Mrs. L., aged twenty-seven years, married four years. Dr. Hillary first saw her in 1886, for retention of urine. The bladder was emptied by catheter and a tumor of the uterus was discovered about the size of a large pineapple. She had been aware of its presence for about a year. The catheter was used several times and the patient was advised to enter the Toronto General Hospital for further advice. She failed to do so.

Dr. Hillary then lost sight of her until October, 1888, when he found her over six months pregnant with an enormous tumor occupying the whole abdomen. She measured thirty-nine inches around the abdomen at the level of the umbilicus. The uterus was to the right and the tumor reached to the ensiform cartilage. The fetus could be plainly felt. Labor pains set in on December 13th, and lasted until December 15th, when in consultation it was decided to give chloroform and attempt delivery. The child's head was the presenting part. Long forceps were applied, but delivery could not be accomplished by that method. Dr. Hillary and the consultant agreed to turn, but feeling that the case was likely to be critical and exhausting, they sent for another physician and he soon arrived. Two efforts were made to turn, but the position of the child could not be altered, although the feet could be grasped. After another half-hour the third effort was successful and one foot was brought into the vagina. The other foot was then grasped, and while one physician pushed the head upward the other made traction on the feet. In another half-hour the body was brought down. Difficulty was next met with when an attempt was made to extract the shoulders and head, but the delivery was at last accomplished. I relate these details to show the great difficulty experienced by three excellent practitioners, and to emphasize the dangers incident to such a procedure. The placenta required removal by the hand and a catheter was required to draw off the urine for four days. Fetus weighed six pounds.

On the fifteenth day after delivery the patient began to complain of pain in the abdomen, sickness of the stomach, and fever with chills. This was on the 30th of December. On the 31st the vomited matters became green and at last black. The patient died on January 3d, 1889.

Post-mortem examination was made twenty-four hours after death. There were no evidences of peritoneal inflammation. The tumor weighed seventeen pounds, and measured nineteen inches from base to apex and eleven inches across.

On its right lateral aspect and a little behind, the uterus was found. It would readily hold the open hand and was filled with stinking pus. It measured 4 x 6 inches and was like half a bladder on the wall of the tumor. The left appendages could not be found.

Previous to December 30th, antiseptic injections were used, to avoid, if possible, any septic poisoning.

The early removal of the tumor was contemplated as soon as she should regain her strength. Dr. Hillary is of opinion that death occurred from the retention of septic material within a non-elastic, non-contractile uterus.

CASE IV. *Uterine myoma complicating pregnancy; delivery at term; subsequent suppuration of the tumor necessitating enucleation from below; recovery.*—Mrs. J., aged thirty-nine years, was admitted into the Toronto General Hospital, under my care, July 22d, 1891. Dr. Stevenson, her physician, wrote me and said that she was confined on the last day of May, 1891. The labor was not difficult, but a peculiarity was noticed during the delivery of the afterbirth. Had he not delivered the placenta himself he would not have believed that it had come away. He was convinced that some form of tumor was present. This was the first labor. Four years previous to this time she had suffered from some illness attended with much vomiting. One year ago she had painful and frequent micturition.

Four days after the birth of her child pain set in. It commenced in the right iliac region, and shot across the abdomen and into the back. It was at first constant, but when she first came into the hospital under my care it came on for a few hours and then ceased for a time, only to reappear. The lochial discharge lasted for about five weeks. Two weeks before I saw her, or about five weeks after labor, a greenish-yellow, thick, foul-smelling discharge commenced to flow from the vagina. It gradually increased in quantity, though it diminished in consistency. She required about four napkins daily. She reclined on the left side, because she suffered from pain when she turned on her back. Abdomen tender on percussion in the right iliac region, where a dull note was elicited. The rest of the abdomen was tympanitic. My house surgeon diagnosticated the case as one of acute metritis.

Examination of urine gave nothing abnormal. The temperature was that of septicemia. A large abscess of the left labium majus was found. This was sufficient to account for the pus temperature. Under chloroform the abscess was opened and explored with the finger. No interior communication could be found. Pus was oozing from the uterus and the tumor springing from the right uterine wall, and fundus could be readily felt. I therefore dilated with Goodell's dilator and passed in a finger. A large sloughing myoma was found. It was apparently a combination of the three varieties, submucous, parietal, and subperitoneal.

I enucleated it from below; the hemorrhage was very profuse but not

alarming, and to check it I packed the uterus with knotted strips of iodoform gauze, tamponed the vagina, and applied an abdominal binder and pad.

When the uterine tampon was removed it was scarcely blood-stained, though I had scooped out large pieces of the myomatous tissue, leaving only the subperitoneal portion of the capsule behind. She made a splended recovery, and went home in perfect health.

I relate this case because it presents another feature of the question we are endeavoring to answer. Here a pregnancy was apparently happily ended. In four days the patient became very ill with what might have been taken as a puerperal septicemia had not the fibroid been large enough to make its presence known. I feel convinced that these fibroids exist when they are not detected, and that they slough subsequent to both labor and miscarriage, and give rise to prolonged and obscure illness. May they not be a cause of some cases of unexplained "puerperal fever?"

The next case is intended to illustrate the effect of miscarriage on a myomatous tumor. It has been brought under my notice within the last two weeks, and I relate it at length in this connection to avoid the necessity for any future report.

CASE V. *Myomatous tumor of the uterus and pregnancy; miscarriage; symptoms of septicemia; inflammation and probable suppuration in the tumor; obstruction of the rectum; exploratory operation; non-removal of tumor, owing to position and adhesions; recovery from operation; case still under treatment.*—Mrs. G., aged thirty-three years; menstruation regular until four years ago, when pain began in the right groin and at the lower part of the abdomen, shooting down the legs. Menorrhagia came on. Two years ago she had a miscarriage. Two months ago (June, 1891) she had another miscarriage. The fetus came away on Thursday. On Sunday her husband, a railroad employé, was brought home badly injured. She rose from bed and waited on him until Monday night, when what she supposed was an attack of inflammation in the lower abdomen forced her to bed again. She then lay for four weeks, when her child was taken ill. She thought she got up sooner than she should have done. She now noticed that she required to strain more than usual when her bowels moved. This difficulty increased. Spasmodic pains came on every ten or twenty minutes, and she felt a desire to empty the bowels, but was unable to do so. For three weeks before I saw her (September 3, 1891), she passed nothing but a little mucus per rectum. When straining she noticed a swelling in the left groin. This swelling, she said, shifted itself, at first gathering up into a hard lump, and then diffusing itself over the abdomen. Vomiting set in. At first this occurred only two or three times a day, but when she came under my notice she vomited everything that she took in the form of solid nourishment.

*

Temperature rose to 101° at night, and dropped in the morning to about 99°. Pulse about 100. The temperature and pulse indicated pus or pelvic inflammation. The pelvic inflammation dated from the miscarriage. On examination under chloroform I found a mass in the pelvis, filling up the right and left parametrium and pressing around the rectum, producing tension and shortening of the utero-sacral ligaments, and almost complete obstruction of the rectum at that point. Above this the rectum could be made out, distended with boggy, lumpy, fecal matter. Abdomen enlarged and dulness on percussion over left side of it, and extending up to the level of the umbilicus. I diagnosticated this mass as a collection of fecal matter, and thought the pelvis more typical of the old-time pelvic cellulitis than any pelvis I had ever felt. The sound passed three and one-half inches into the uterus, and the uterus was evidently in the centre of the mass. No ovaries or tubes could be felt on either side, owing to the apparent matting of the parts.

High enemata were ordered, and did not seem to be effectual for twenty-four hours. I arranged to explore the abdomen and to open the bowel for the present and allow the patient to gain her strength before attempting the removal of any mass from the pelvis.

On the morning of the operation (forty-eight hours after the high enemata) several evacuations of the bowels took place, and the tumor became reduced in size. But when under chloroform for the laparatomy an indefinite mass could be felt in the abdomen, spreading up behind the bowels. On opening the abdomen I found the rectum with lumps of fecal matter in it, but not abnormally distended. It was non-adherent, and had no doubt moved around, as the patient said, in its attempts to empty itself of its abnormal quantity of fecal matter. Down behind thickened and firmly adherent omentum and bowels was an irregular, firmly imbedded mass, filling the posterior part of the pelvis and extending up into the abdomen behind omentum and adherent bowels to the level of the umbilicus on the left side, but not quite so high on the right. It was evidently a firmly bound, inflamed or suppurating multinodular uterine myoma. It was only by the combined vaginal and intra-abdominal examination that I could come to a positive conclusion. The adhesions were so firm that they could not be separated without tearing the capsule of the tumor, and the tumor was firmly adherent to the pelvic peritoneum behind. Removal would have meant death to the patient, and a previous experience with a similar tumor stayed my hand. The patient is recovering from the operation, but I am unable to say what the termination will be. This case is one of abdominal tumor complicated by pregnancy. Miscarriage resulted. This was followed by inflammation around if not suppuration in the tumor, and the woman's life is seriously endangered. If suppuration is going on in the tumor the septic temperature will no doubt continue.

After giving my mite of experience it is only right that I should add them to what can be learned from our great masters, and endeavor to lay down a definite course of procedure.

Ovarian Tumors and Pregnancy.

The methods of treatment might be, to—

(*a*) Allow the pregnancy to go to term or until the uterus throws off its product.

(*b*) Puncture the cyst from time to time until delivery is completed.

(*c*) Induce premature labor.

(*d*) Perform ovariotomy—the uterus left to abort or go on to term.

(*e*) Perform ovariotomy—the uterus emptied of its contents by Cesarean section.

(*f*) Perform ovariotomy and abdominal hysterectomy.

Experience is against the induction of premature labor. Patients will abort and recover, and abort and die, in about an equal number of these cases. A large number of cases in which ovariotomy is performed during the early months of gestation will go on to term. Early operation is undoubtedly advisable unless the cyst is a small one and not likely to impede the labor. When operation is performed during the early months of gestation it is advisable to leave the uterus unemptied. When pregnancy has reached a later stage experience shows that cysts with fluid contents and favorably situated may be tapped several times if necessary, with perfect safety. Some have aborted after tapping. The experience of Sir Spencer Wells with tapping was satisfactory. He tapped five cases, and in all living children were born. One patient was tapped three times. Sudden death occurred in three cases that were not tapped or operated upon, in or before the seventh month of pregnancy, from rupture of the cyst. If no such rupture occurred in cases where the pregnancy and ovarian tumor were allowed to progress together without interference, the children were born in two. It is certainly not safe to allow the two conditions to continue without interference. Exceptional instances may occur in which the tumor is probably dermoid, and hence of slow growth, but in all cases there is danger of a rupture of the cyst or a twist of its pedicle. But cases may have passed the fourth month of pregnancy

and the tumor may be multilocular or unilocular with colloid contents, or dermoid, and therefore not suitable for tapping, or may be so situated as to cause a serious impediment to labor. Removal of the tumor will be difficult from the size and position of the pregnant uterus; the uterus may be accidentally cut into or punctured, or may require much handling. In such cases I believe the best interests of the patient will be served by emptying the uterus and removing the cyst. Abdominal hysterectomy should only be performed when Cesarean section is inadmissible on account of the continuance of hemorrhage from the uterine incision or placental site. Only one ovary should be removed if the other appears healthy, unless by special request of the patient. If urgent symptoms arise at any time during the course of the progress of the two conditions, or after tapping, operation should be done without delay, and the rules already laid down should aid us in our decision as to the best method of treating the pregnant uterus.

Vander Veer mentions four cases in which the uterus was accidentally punctured. In two of them Cesarean section was successfully performed; in one the wound was closed by suture followed by abortion and death; in one abdominal hysterectomy was performed, followed by death.

Sir Spencer Wells says that of three cases in which the uterus was punctured, the only one that recovered was the one in which the pregnant uterus was emptied.

I find a case recorded in the *Boston Medical and Surgical Journal*, in which the pregnant uterus was punctured during ovariotomy, followed by recovery and labor at full term. If the pregnant uterus is punctured it should be emptied of its contents.

Myomatous Tumors and Pregnancy.

(*a*) Induction of premature labor.
(*b*) Early myomotomy or abdominal hysterectomy.
(*c*) Late abdominal hysterectomy or Cesarean section.
(*d*) Tentative measures such as:
1. Enucleation to permit of the completion of labor.

2. Enucleation of a sloughing tumor following the labor.
3. Abdominal hysterectomy for a sloughing tumor or uncontrollable hemorrhage following the labor.
4. Abdominal hysterectomy for septic infection from retention of discharges in a non-contractile uterus following labor.
5. Abdominal hysterectomy or Cesarean section to end a labor that will require long forceps, version, or craniotomy.

Playfair only voices the sentiments of those who have the experiences that teach, when he says:

"The risks of pregnancy should be avoided in every case in which uterine fibroids of any size exist."

I have recently removed the ovaries and tubes from a lady suffering from uterine fibroids. She has had miscarriage after miscarriage. Her husband would take no means to avoid the production of pregnancy. These were genuine miscarriages, because the products of conception were found. Owing to three conditions—the dangers from repeated and exhausting miscarriages, menorrhagia, and pruritus pudendi—I removed the ovaries and tubes. I have never seen repeated miscarriages in cases suffering from uterine myomata urged as a plea for oöphorectomy. This patient never carried a gestation beyond the third month. I look upon a uterine fibroid as one of the most frequent causes of abortion.

These abortions cannot be prevented; they have added to them an increased element of danger from excessive and uncontrollable hemorrhage, and they may be followed by an inflammation and suppuration of the tumor.

Pregnancies in such cases will occur; women with fibroids will marry in spite of well-timed advice; and fibroid tumors will develop in married women, or may be present in women before marriage, without giving rise to symptoms.

Fibroids are prone to suppurate after labor and after miscarriage; they are prone to increase rapidly in size during pregnancy, and sometimes disappear as rapidly after delivery.

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The literature of this part of our subject is not extensive. Between the gynecologist and the obstetrician it has been neglected. Each refers the reader to the other, much to the reader's disgust.

Many good surgeons have demonstrated the fallacy of the old idea, that any operation on a pregnant woman was almost sure to be followed by abortion or premature labor.

Cases have been reported of the enucleation of myomatous tumors from the wall of a pregnant uterus with delivery at full term. I am convinced that myomatous tumors may be enucleated from below, if sloughing, without any great danger. I have been amazed at the small amount of bleeding from two tumors inside whose capsule I have had my hand from below. When torn above in the abdomen the bleeding from the capsule is terrifying.

When a fibroid tumor of sufficient size to obstruct labor is found growing from the cervix uteri, I believe that it may be safely enucleated from below, and that labor can then be completed. When the fibroid tumor grows from the uterine wall and makes delivery a complicated and formidable procedure, I believe that an abdominal delivery will give the best results if carried out before the woman has become exhausted by manipulations from below.

Lusk, quoting Chambazian, says, that of 20 forceps cases, 12 mothers and 7 children were saved; of 20 version cases, only 8 mothers and 3 children were saved; or in other words, out of 40 cases, 20 mothers and 15 children were saved; a mortality of 50 per cent. for the mothers and of 63 per cent. for the children. The Cesarean section and abdominal hysterectomy of to-day can undoubtedly give much better results than these.

My belief is that craniotomy, version, and the forceps, should give way to modern Cesarean section or abdominal hysterectomy in cases of labor complicated by fibroid tumors of the uterus. Cesarean section should only displace abdominal hysterectomy in those cases in which the latter cannot be carried out owing to the intra-pelvic character of the growth.

By abdominal hysterectomy three of the great dangers accompanying delivery by forceps, version, or craniotomy will

be removed, namely: hemorrhage, suppuration of the tumor, and the retention of the discharges in a non-contractile uterus.

When a broad-ligament myoma complicates a pregnancy and gives rise to symptoms necessitating interference, enucleation may be possible, but this fortunate condition will more probably be met in cases of concealed pregnancy where the operation has been primarily done to remove the tumor. Should enucleation appear possible, it should be attempted, and if successfully accomplished the uterus should be left alone. But if an extra-peritoneal pedicle is necessary, an abdominal hysterectomy should be the operation chosen.

When a fibroid tumor is growing rapidly and pregnancy exists, I believe early abdominal hysterectomy should be done if the patient is much inconvenienced by her size. But with the tentative measures mentioned kept well in view, I cannot see that there is any great urgency for early operation.

Fibroid tumors accompanied by pregnancy differ in this respect from ovarian tumors accompanied by pregnancy. In the former I would not urge early operation; in the latter, I would urge early operation.

In this imperfect presentation of the subject I do not wish to appear dogmatic. The views expressed are simply my own, and as my experience enlarges they may become materially changed.

DISCUSSION.

Dr. Horace T. Hanks, of New York (by invitation).—Mr. President: I have been interested for many years in the subject of uterine and ovarian tumors complicating pregnancy. I agree in the main with Dr. Ross's conclusions; but I think we must judge each case on its own merits. It is a subject I looked up some years ago, and read a paper upon it. (See *Am. Journ. Obst.*) We had had reports of a large number of cases of pregnancy complicated by uterine fibroids, and a number complicated by malignant disease. I reported four or five cases from my own practice. The subject of ovarian cysts and pregnancy is of great interest, and I have had my share of experience in this line of work also. I believe that we should operate or not operate, not altogether because the patient wishes it, but because

the life of mother and child is rendered more or less safe, and because you have got or have not got a good assistant to take care of the patient. I should never go seventy-five miles into the country and remove an ovarian cyst from a woman several months pregnant, and leave the case in the hands of the family physician, who knows nothing about such cases. In one such case the patient had been tapped a month before I saw her, and all the ovarian-cyst fluid was removed. I went there and operated. The patient recovered from the operation and gave birth to a live child ten days after the operation, and the child lived a week, but the mother died ten days after the birth of the child.

I think we not only want to consider the case of the patient, but the surroundings also, and when you know that you have a unilocular cyst you can tap and remove the fluid, and the patient can go on to term, or at least to eight and a half months. Then, if danger threatens, operate, and you are justified in doing it. If she is in your hands in a private or public hospital, it is somewhat different. But if you have a dermoid cyst, and have symptoms which demand relief, you are justified in operating. If you have pregnancy complicated with fibroid tumors, the case is different. They grow very rapidly from the first month up to the fifth or sixth month, but do not from the seventh to the ninth month. That, at least, has been my experience. If the tumor is situated in the cervix, and you can enucleate it, you are justified in doing it, because you cannot deliver through a cervix of which two-thirds is a fibroid. If you cannot do that, you are justified in producing premature labor or an abortion at the second or third month. If the uterus is movable; if it can be pushed up easily; if the tumor is the size of your fist; if you can push the cervix above the brim, and you have two-thirds of the cervical tissue healthy, you are justified in delaying until the child is viable. If your tumor is above the middle zone, it is not going to do much harm. The child can be delivered quite easily if the tumor is there. I have delivered three women at term where there were fibroid tumors four or five inches in circumference, located in the upper zone, and in each case mother and child lived. But where you believe that the tumor is so large; when you are called in in the second month, and find you have a pregnancy complicated with a fibroid tumor, and this tumor covers a large portion of the lower zone, I think the best plan of all is to produce an abortion at once. If the patient is six months pregnant, in such a complicated case do a hysterectomy. You have to treat each case on its own merits. These cases today are not so formidable as they used to be, because if you find that you cannot

deliver at term you can perform abdominal section. We expect our patients to get well in either case. There is always danger of hemorrhage and of suppuration after delivery at term, but with our antiseptic solutions we ought to meet the emergencies as they come.

Dr. A. Vander Veer, of Albany.—I feel a little reluctant to take up the time of the Association, as there are men here who are better able to discuss this excellent paper than myself, but there are a few points I would like to spend a few moments upon. The difficulty of diagnosis in a case of a fibroid of the uterus or ovarian tumor is one the problems of surgery. I feel that the subject is being handled with much greater clearness and more satisfaction than formerly; but it is essential to make a diagnosis, and in making the diagnosis we have very little that helps us in the history that is given by the patient. A lady, married, who has had children, or who has not had children—perhaps anxious to have children—if she has a uterine fibroid, will endeavor to make you believe that she is not pregnant, because she believes there is a great deal of danger ahead for her. If she is unmarried, she certainly denies it *in toto*. Yet I have noticed three or four cases where surgeons were induced to cut down upon a supposed fibroid in an unmarried woman, and found their mistake in coming upon a pregnant uterus. These cases are more apt to be seen in married women. We have to make a diagnosis from actual examination and from our own knowledge of the symptoms of pregnancy. It is necessary to make a diagnosis as regards fibroid tumors. The difficulty, I believe, in many of these cases at full-term delivery, in saving the life of the child and the woman, is in the location of the tumor. If the tumor is located low down in the uterus, it is almost sure to give trouble. A small-sized fibroid tumor located near the fundus of the uterus will give almost no trouble at all. But another condition which Dr. Ross did not touch upon—perhaps he did not intend that his paper should reach out in that direction, but this has been touched upon by some others and some pathologists—is this, that in most cases in which a patient who has a uterine fibroid becomes pregnant, the tumor will take on immediately a certain amount of growth; more in some cases than others. In some few cases it will go on to sarcomatous degeneration, and then even the Cesarean section will not save the patient. Therefore, I say, it is essential that a diagnosis should be made, and if the fibroid is located low down, then premature delivery or operation is almost made a necessity. Now, even in the plainest cases of uterine fibroid in which you have the complication of pregnancy, those of us who have watched

them will agree that there is scarcely a case in which the tumor is not exceedingly tender, showing the liability to take on suppuration, and from that to a septic condition is an easy stage. A little while ago a case of this kind presented itself: A lady living near Pittsfield, married ten years, exceedingly anxious to have children, had, without a doubt, a fibroid tumor. The family physician sent for me to determine as to the propriety of an operation. I said: "My good woman, you are pregnant in addition to the fibroid." She was taken to a hospital at Pittsfield and attended, and made a good recovery. But the fibroid after delivery almost seemed to be in a condition ready to suppurate. She, however, escaped that direful termination, yet that fibroid was located on the upper segment of the uterus, or rather on the right of the uterus, and was in a favorable condition for the pregnancy to go on to term. There is another point that I have not heard dwelt upon to any great extent, viz.: the question of the diagnosis of a fibroid that we realize is there, or know is there. The patient goes on and has a very natural pregnancy, a good delivery, and the fibroid disappears. The facts are these, that fibroids will disappear under the influence of pregnancy; the pregnant state seems to produce that effect upon them. The medico-legal point of the question has been touched upon by two or three of the decisions that have occurred in court, which I discovered in looking up the subject carefully for another paper. We should be thoroughly united and thorough in our emphasis that in these cases the fibroid does sometimes disappear under the influence of pregnancy. Very little can be said in addition to what Dr. Ross has urged regarding the treatment of ovarian tumors coupled with pregnancy. I believe in those cases we should tap and carry the patient along as far as possible toward term. If it is a single cyst we should tap, and in that way avoid the doing of as severe an operation as laparatomy; although we all know that we can open the abdominal cavity during pregnancy, and our patients go to term, and that it is rather the exception to have such a patient abort. We can do abdominal section in cases of pregnancy with comparative safety. Nevertheless, I say of the single ovarian cyst, If it can be tapped, let it be tapped.

Dr. L. S. McMurtry, of Louisville.—The course to be pursued in cases of pregnancy complicated by tumors must depend upon the indications of special cases and the period of pregnancy when each patient applies for treatment. For example, if the case is presented at a time when the uterus is comparatively small and the tumor lies alongside with a distinct line of demarcation between ovarian cyst and

uterus, making diagnosis clear, then we can safely proceed to removal of the tumor. When, however, the patient is far advanced in pregnancy, and the diagnosis between ovarian cyst complicating pregnancy and hydramnios with attenuated uterus is not clear, then a decision as to operative interference is more difficult. The diagnosis of pregnancy associated with myoma of the uterus is often most difficult. I have recently had in my care such a patient, who refused to believe herself pregnant when I could feel the movements of the child *in utero*. Every case must be treated upon its special indications. As a rule, it is best to adopt tentative measures until it is evident that safe delivery cannot be accomplished. We are indebted to Dr. Ross for gathering together so much valuable experience upon this important subject and formulating lines of action for our guidance.

Dr. M. C. O'Brien, of New York.—Tumors complicating pregnancy are formidable in proportion to their position, number, size, and formation. It behooves us, therefore, when confronted with a tumor during pregnancy or found obstructing labor, especially in the latter case, to terminate the ordeal with every possible haste and precaution consistent with safety; and then, with the concurrence of the patient, take advantage of any scientific means to prevent another occasion whereby the mother's or child's life may be jeopardized—for tumors will grow, and women will become pregnant. I call to mind a case which will substantiate the above proposition. Six years ago I delivered a woman, after a labor lasting from eight in the evening until six the following morning, of a five and one-half pounds female child. The breech having presented, I had frequent recourse to pressure upon the fundus uteri, and during these manipulations discovered a hard, nodular tumor at the right cornua. The placenta was so firmly adherent at this identical point that I had to call in a neighboring friend, who removed the placenta completely, and confirmed my diagnosis of an extra-uterine fibroid—hard, nodular, and the size of a billiard-ball. The third day following, I informed the husband of his wife's condition; he, in turn, told his sister-in-law, who exclaimed that her elder sister had twins, two weeks before, and that there were "no tumors in the family." The next morning I found the patient lying under a large flaxseed poultice, applied *secundum artem*, to take down the "lump." I was summarily dismissed.

Four months ago, while making a call at the Harlem Hospital, in the northeastern part of this city, the surgeon, Dr. Thomas H. Manley, showed me a case of cancer of the right mamma, that he proposed operating upon. The patient had ptosis of one eye, which gave her a

peculiar expression, by which I identified the person of my quondam patient of the "tumorless family." I learned that she entered under an assumed name. I looked up her last physician (for she suffered from many), and gleaned that during the previous four years she had been twice delivered of immature children, but that he did not know of anything unusual about the uterus.

In the course of a few days the breast was amputated, the axilla cleared out of many enlarged glands, and by the fifth week she was so far improved as to be able to leave the hospital and return daily for inspection. Being of a dark complexion and spare build, her emaciation and cachexia showed perceptibly, but being over forty years of age, with a flabby, pendulous abdomen, no particular attention was given in that direction, and she took much pains to conceal her condition, as the nurses subsequently informed me. I wanted to make my grounds pretty firm, and requested of Dr. Manley that the abdomen be examined, and, to the consternation of everybody present, that abdomen was found to be completely filled with hard, nodular masses, from the size of a chestnut to that of an orange—the uterus bound down by firm adhesions, enlarged, doughy, and immovable—an ichorous, foul-smelling discharge issuing from the vagina. (There was no syphilitic history in this case.) After improving somewhat, the patient gradually retrogressed and eventually died within two months. A post-mortem proved these tumors to be sarcomatous, and the whole peritoneal cavity was filled with one mass of sarcomatous tissue.

I conclude therefore, gentlemen, that when we find, in a parous woman upward of forty years of age, a hard, suspicious tumor of the uterus or uterine adnexa, that we should make an effort to prevail upon the patient to have it extirpated, because, at the climacteric, which is soon to follow, this adventitious tissue will most probably assume a malignant character. Had my patient been relieved of her diseased uterus after the birth of her first child, she would have been saved two abortive labors, the torture of cancer, and might possibly be living today.

Dr. I. H. Cameron, of Toronto.—I regret that I did not arrive in time to hear all of Dr. Ross's paper. Gathering some inkling, however, of its main bearings from the remarks that have been made by others, I must say that I am strongly in accord with the opinions expressed that no general rules can be laid down for our guidance in any case. Every case, as Dr. Hanks has said, must be treated on its own merits. It seems to me, however, that a distinction should be made. My experience in operative proceedings is confined to those

involving the tubes. In four such cases I operated early, and had satisfactory results. In regard to fibroid tumors complicating pregnancy, it has been my fortune to see a number of cases in the hands of others. They terminated disastrously. On those grounds I am inclined to think that a sharp distinction should be made between between tumors involving the uterus and those involving the ovary. As Dr. Hanks said, the position of the fibroid tumor makes all the difference in the world, and I suppose that if it be clear that the position of the tumor does not interfere with delivery, it might be laid down as a general rule that interference ought not to be had before gestation was completed. Of course, there may be risks of inflammation from malignant disintegration, and that has to be taken as one of the risks incident to the position. I think to interfere in these cases before labor is meddlesome surgery. Some of the cases Dr. Ross speaks of had come under my own observation, and one I had the good fortune to escape operating upon. I understood it was an ovarian tumor.

I have operated on two cases in the puerperal state for ovarian tumor, with very satisfactory results. In other cases the tumor was diagnosticated before the gestation was complete. I had a patient last week who caused me a great deal of anxiety. She was a primipara, thirty-five years old, seven months advanced in pregnancy. Suddenly in the night she was siezed with pain, but had been having intermittent pains before, though they did not attract much attention. Morphine was administered. The next day the temperature went up, and I found peritonitis had set in. It was decided that the chance of succeeding in an operation was very slight. The attending physician would not consent to the operation proceeding with the patient dying on the table, and as for some days there had been no movements of the child—the supposition, therefore, being that it was dead—I reluctantly consented to forego any operative interference. The patient died the next day, undelivered, of course. That was a case that caused me a great deal of anxiety, and if any line of action could be laid down as being uniform in such cases, I would have been relieved.

On two or three occasions, I think, patients have come to me who have had fibroid tumors pressing down into the pelvis, their physicians stating that within the previous month delivery had been effected. I supposed with my examination at the time that a delivery under the circumstances would be impossible. Those cases I operated upon by removal of the uterus and tubes, and they have done uniformly well. My own impression is that in such cases it is just as well to allow the

case to proceed to term. In one or two cases of fibroid tumor of the uterus a curious phenomenon occurred, and that is that after death the temperature rose in each case to 110°. Two hours after death in each case the temperature rose to 110°. I merely mention it to see if others have had a like experience. The only conclusion I can come to from my previous consideration of the cases is, as I have said before, each case must be treated on its own merits; that the chances of the patient are not very much diminished by the operation soon after labor.

Before sitting down I would like to enter my protest against tapping in unilocular cysts. Twice in the last week I have had occasion to demonstrate the very great danger which exists in tapping. Some years ago a case was tapped by a colleague of my own, and the next day I saw a post-mortem made. Last week a patient was sent to me for operation for ovarian cyst, the supposition being that it was a fibroid; the differential diagnosis led me to suppose it was an ovarian cyst. At the operation it turned out to be a multilocular cyst. Another result which I had not observed: the colloid material had pushed through the point of puncture in tapping. I am happy to say that she has recovered.

Those two cases, with my theoretical observation of the subject, urge me to enter my protest against tapping an abdomen under any circumstances. If it is deemed advisable to relieve the pressure by puncture of the abdomen, it is my opinion that we should do it in the usual way.

Dr. E. W. Cushing, of Boston.—The reader of the paper asked for experience on the subject he has presented, and I offer the following: A woman who had been married fourteen years, never had a child, and was not expecting one, had a large, rapidly increasing ovarian tumor. I operated, lifted out the tumor, and found it a sac lying over a pregnant uterus. She recovered without any bad symptoms. Around that uterus and the lower part of the tumor there were immense veins—a whole nest of them. It would have been an excellent chance for the woman to bleed to death if she had been tapped. It was a unilocular cyst, such as Dr. Cameron mentions that there would be danger in tapping. From my own experience with that one case and my general experience, if I had to open the abdomen of a pregnant woman I should not tap it. In regard to myomatous tumors complicating pregnancy, I have not operated on any, but I have witnessed such an operation. As Dr. Price, who operated, is not here to cite it, I will refer to it. The woman had a large fibroid tumor, part

of it so situated as to obstruct the pelvis. Dr. Price waited until the term of delivery. The tumor was removed by abdominal hysterectomy. It was a beautiful operation, with no difficulty whatever: a large incision, sponges packed around, removal of the child, constriction of the neck of the tumor, and removal of it from the abdomen. The woman was nursing the child on the third day, and never had any subsequent trouble. I know he has had other cases like this since. So that it seems to me that such an operation is safer and more in accordance with modern surgery than attempting to enucleate from below a fibroid tumor that is obstructing the pelvis. It is better to let the woman wait until term. This shelling-out of the tumor from below in any woman seems to me to be a very dubious sort of surgery.

Dr. Henry O. Marcy, of Boston.—Though I did not intend at first to enter this discussion, there are yet one or two points that I will call attention to. I quite agree with my friend Dr. Cameron. I had supposed tapping under these conditions was out of the question. In illustration of it, some time ago, I assisted my friend, the late Dr. Fox, of Lowell, in removing a simple monocyst of the ovary, where a woman was perhaps five months pregnant, and the remarkable thing was the interlacing of the large veins. They were largest where one would have been likely to have introduced the trocar. We thought of it at the time, and called attention to the danger that might occur from the injury of such veins. In illustration of the danger of tapping, I have recently had a remarkable experience in my own practice. A woman sent to me for diagnosis had a small cyst lying to the right, thought to be probably a cyst of the broad ligament. On the strength of the diagnosis the physician tapped. I did not hear anything from the case until I was asked to go ten miles out of town to operate, with the assurance that her condition was excellent, but that the cyst had refilled. When I saw the patient she was already etherized on the table, ready for operation. The conditions were these: There was a flat, irregular cyst of the abdomen, entirely unlike what I had seen before. Then I asked about the temperature. She had been having a run of fever for a week or ten days. In operating we found the cyst was everywhere adherent, and that the uterus was enlarged. At the back of it lay a large fist-sized abscess, connecting with the point of puncture, and so changed were the pelvic structures that we finally found it was safer to remove the uterus, thus making clean work of it.

She made a good recovery. But it showed how seriously the life of the patient was jeopardized and how dangerous an operation was made necessary, as the result of what the physician thought was simply tap-

ping in the hope to cure. I think we ought to enter our protest as strongly as we can against tapping, the common practice of the early days—an operation at the best of doubtful value, and often a means of carrying infection into a patient's abdomen, resulting in the most serious complications which often result in death.

Dr. W. W. Potter, of Buffalo.—As contributory to the grouping of cases in which abdominal tumors have been removed when complicated by pregnancy, I would invite attention to one which I reported in Vol. I. of the *Transactions* of this Association, 1888. In this case both ovaries were cystic. On the left side the tumor had existed for several years, and had been tapped a number of times, a pailful of water, according to the patient's statement, having been drawn on two or three occasions. Finally, she became pregnant, her last menstrual beginning November 17, 1887. I operated on March 30, 1888, removing a large tumor, partly cystic and partly solid, from the left side, and a smaller one from the right side.

The interesting and somewhat unusual features of this case may be epitomized as follows, viz.: a large, old, semi-solid cyst of the left ovary; pregnancy supervening; abdominal section in the fifth month; right ovary found cystic, containing twenty ounces of fluid; both ovaries removed; pedicles tied off and dropped; recovery; delivery at term; lactation complete, and child nursed; no subsequent menstruation or flux of any kind. The second cyst, the one involving the right ovary, presumptively grew after pregnancy, *i. e.*, between November 17, 1887, and March 30, 1888. This was claimed as the first double ovariotomy performed during pregnancy in this country where the woman subsequently went to term, was delivered, and nursed a child. I am not aware that the claim has been disputed or that the case has been duplicated.

The cases that Dr. Cushing refers to as having been operated on by Dr. Joseph Price will be found illustrated in the third volume of the *Transactions* of this Association, and will repay examination in connection with the discussion on the subject there printed.

Dr. Marcy.—What was the venous state in your case?

Dr. Potter.—Highly congested; the uterus, tumors, and pelvic tissues generally were highly vascular. I believe another tapping of this woman would have been a grave error. I am one of those who discountenance tapping in ovarian tumors, but if anything is done let it be an incision, as advocated by Dr. Cameron, and then determine how far to carry on the work after the abdomen is open.

Dr. J. Henry Carstens, of Detroit.—I am very happy to indorse what Dr. Cameron has said. You will remember that in the second volume of the proceedings of this Society, I reported a case of fibroid tumor complicating pregnancy, which I removed, and in which the patient went on to recovery. I saw also one of my friends in Detroit operate on a case with no trouble whatever. I am inclined to think, on account of the peculiar changes of the blood, union takes place better during pregnancy than at any other time. And I wish emphatically to protest against the tapping of tumors during pregnancy. I believe cases of ovarian tumor, no matter what kind they may be, occurring during pregnancy ought to be operated upon. In cases of fibroid you have to judge of each individual patient by herself. I remember a case a short time ago where a fibroid tumor complicating labor existed; we got through the labor. I remember one case of a physician's wife with a sarcoma. I advised him to let the case alone and permit his wife to go to term. The child is living, and the woman also is still living. I also remember one case where I detected the growth three years previously. I never saw the woman again until I saw her in consultation when in labor. She went into a profound shock, and before I could get ready for the operation she died. She had an immense fibroid tumor, and undoubtedly death was caused by the complication of it. I indorse the statement that ovarian tumors ought to be removed, pregnancy or no pregnancy, but fibroid tumors should be treated each case by itself; sometimes premature labor should be induced and sometimes not. But we should make a diagnosis, and I claim for one that it is not a very difficult thing to do. I think by working carefully we can always make a diagnosis of pregnancy; if not on one day, we can wait a week or two, when we can then almost invariably make a diagnosis. I think to operate without making a diagnosis of pregnancy is reprehensible.

Dr. Vander Veer.—I do not suppose there is any man in the State of New York who has emphasized more in his teachings this point in reference to tapping in the case of an ovarian tumor than have I. I have seen more evil than good result from it, and I agree with the remarks made in that direction. I remember the days when Dr. Peaslee used to tap, and I remember the results. I have been very emphatic on this subject. When you consider a case of ovarian tumor complicated with pregnancy—they do not occur very often—I have advised caution and not abandon all thoughts of tapping. It has been said that the discussion of a paper is frequently worth more to the Fellows than the paper itself. I think that is so with several here

today. The dangers of tapping are serious outside of pregnancy. I say never tap, not even with the needle of the aspirator, or the hypodermic syringe. It is astonishing how the abdominal cavity will accommodate itself to an ovarian tumor. I operated in a case recently in which the physician wrote me previously: "I delivered Mrs. So-and-so of a child. When I got through her belly was a little larger than it was before. I put on a bandage and walked out around the house, came back, and made another examination. I concluded there was another child there. Finally I went home and spent the evening reading the text-books." I went to the house of the patient and operated, and it was astonishing to see how large an ovarian tumor that woman had. I found a simple ovarian cyst. The woman went on to uninterrupted recovery without any complication at all. This is just to illustrate how the abdominal cavity will accommodate itself to these large cysts.

Dr. Ross (closing the discussion).—In reply, I would like to say that perhaps all of you may not have been able, in the hurried reading of the paper, to take in the points I intended to bring out. Several points mentioned in the paper were omitted in the discussion. The reason I did not mention the subject of malignant tumors in this connection was that I thought the lines laid down were already clear. I did not think it was necessary to take up the time of the Association with further discussion of that part of the subject. But the lines laid down with regard to the treatment of the two other conditions are not clear, and I think this discussion has helped to clear them up. Probably if we have further discussion on this subject some other year, we will clear it up still more. There are those who say that each individual case should be taken by itself. How cases are to be judged by themselves unless we have some points to guide us, I do not know. In taking individual cases by themselves we must have some points to guide us, or else experience goes for nothing. Sir Spencer Wells, who had a large experience, tapped five cases. They all went on to full time. He delivered two women, one in five pregnancies and the other in three, where they had small tumors, without tapping, where they went through their pregnancies. So that tapping has been supported by a surgeon like Sir Spencer Wells, with five successes and no deaths. I think the probabilities are that a few of us may occasionally be inclined (to appease the feelings of people who are anxious to have a child) to tap. But if any bad symptoms arise subsequent to the tapping, the abdomen should be immediately opened. I should incise the skin and subcutaneous structures with the scalpel, as I always do, and thus avoid injury to large veins when introducing the trocar.

I would therefore in such cases occasionally be inclined to accede to the wishes of the people and to tap in this way.

There is one point I would like to mention here. During the past summer I explored the abdomen of a woman suffering from ascites, and immensely distended, without any anesthetic. I felt her liver, her kidneys, her uterus, her tubes, and ovaries, and she said it did not hurt any more than if she had a toothache. This was done in the theatre of the Toronto General Hospital.

There is one point that was not brought out that I would have liked brought out. When a case has gone on to a certain time; when one has not seen it until labor has commenced, but has been called for suddenly to see the case in consultation, and to deliver a woman who cannot accomplish her own delivery; the doctor in attendance has waited for some time; the head has not and will not come down; the doctor in such a case wants some advice as to the best thing to do. From the records I have produced here of fibroid tumor complicating pregnancy, there is not the slightest doubt in the world but that better results will be obtained by abdominal operation than by version, craniotomy, or a difficult delivery by long forceps. Dangers from hemorrhage, sepsis, and suppurating tumor will be avoided, the patient will be cured and freed from the chance of future pregnancies, and the dangers of one severe operation will counterbalance the dangers of another severe operation.